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RFP 1325 02 (Rev 2/96)
Previously RF 46522

CORRES CONTROL
INCOMING LTR NO

00825 RF 96

DUE
DATE

ACTION

DIST	LTR	ENC
ALLEN, R C		
BENSUSSEN, S J		
BRENNAN, P D		
BUHL, T R		
CARD, R G		
DEAN, C		
EVANS, B L		
FERRERA, D W		
GEIS, J A		
GILLISON, W R		
GLOVER, W S		
HARROUN, W P		
HEDAHL, T G	X	
HERRING, C L		
HILL, J A.		
KELL, R E		
KELLY, G M		
MANI, V		
MARTINEZ, L A		
McANALLY, J L		
McGOVERN, L J		
McKIBBIN, J G		
MEADOWS, S M		
NORTH, K		
OGG, R N		
SANDLIN, N B		
SHUMWAY, W K		
SPEARS, M S		
STEELMAN, M		
TUOR, N R		
TURNER, K A		
VOORHEIS, G M		
Sieben, A	X	
Tyson, W	X	
Phillips, E	X	

CORRES CONTROL	X	X
ADMN RECORD/080	X	X
PATS/T130G		

Reviewed for Addressee
Corres Control RFP

6/17/96 DK
DATE BY

Ref Ltr #

DOE ORDER # 5400.1

17 JUN 96 - RFETS-CC-1

Department of Energy

ROCKY FLATS FIELD OFFICE
P O BOX 928
GOLDEN, COLORADO 80402-0928

JUN 17 1996

96-DOE-09982

Mr Tim Rehder
U S. Environmental Protection Agency, Region VIII
ATTN: Rocky Flats Project Manager, 8HWM-RI
999 18th Street, Suite 500, 8WM-C
Denver, Colorado 80202-2405

ADMIN RECORD

Dear Mr. Rehder:

The U.S. Department of Energy, Rocky Flat Field Office (DOE/RFFO) is requesting a determination that the thermal desorption technology being used to treat contaminated soils and debris originating from the accelerated actions conducted at Trenches T-3, T-4 and Ryan's Pit at the Rocky Flats Environmental Technology Site (Site) be classified as an *"equivalent technology"* pursuant to 6CCR 1007-3, Para 268 42(b).

The equivalent technology approval will enable disposal of the treated debris as non-hazardous waste. The accompanying enclosure provides the justification and the background for this request.

Debris determined not to be radioactive would be disposed of in the Site's onsite landfill. DOE/RFFO requests approval within 10 days of the receipt of this letter. Any specific questions should be directed to Dave George, DOE/RFFO Environmental Restoration Progress Assessment Team Leader at 966-5669.

Sincerely,

Bob April, Lead
Stakeholder and Environmental Liaison Group

Enclosure

cc w/Enclosure
C Spreng, CDPHE
B Frazer, EPA
Admin Record

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

cc w/o Enclosure
J Kerridge, TA, RFFO
B April, SEL, RFFO
S Tower, EAG, RFFO
D. George, EAG, RFFO
J Rampe, MA, RFFO
T Hedahl, K-H
A Seiben, K-H
A Tyson, RMRS

Equivalent Technology Approval Pursuant to
6 CCR 1007-3, §268.42(B), or 40 CFR §268.42(B)
for the Rocky Flats Environmental Technology Site
Accelerated Action Debris Treated by Thermal Desorption

Pursuant to 6 Colorado Code of Regulations (CCR) 1007-6 §268 42(b) and/or 40 Code of Federal Regulations (CFR) §268 42(b), the thermal desorption technology implemented to treat soil and debris originating from Ryan's Pit and Trenches T-3 and T-4 is an equivalent technology within the meaning of those rules so long as the treatment is consistently conducted with the terms and conditions of the approved Proposed Action Memoranda, the approved Resource Conservation and Recovery Act (RCRA) permit modification, and the approved Sampling and Analysis Plans.

Additionally, consistent with the rules, the debris may not exhibit a characteristic and the 85% Upper Confidence Limit of the treated soil and treated soil residues must not exceed the organic waste-specific treatment standards for the contaminants subject to treatment in the untreated soil associated with the debris

CONCURRENCE

Colorado Department of Public Health and Environment — Date

Environmental Protection Agency — Date

EQUIVALENT TECHNOLOGY APPROVAL PURSUANT TO 6 CCR 1007-3, §268.42(b) FOR ACCELERATED ACTION DEBRIS TREATED BY THERMAL DESORPTION

Background

A Proposed Action Memorandum (PAM) for Ryan's Pit was approved in August 1995 The Ryan's Pit PAM authorized soil excavation and the treatment of volatile organics using thermal desorption. Debris was encountered during the remedial action The debris was segregated from the soil and was then treated in the same thermal desorption unit and under the same operating conditions as the soil In conjunction with the PAM for Ryan's Pit, a modification to the Corrective Action section of the Rocky Flats Environmental Technology Site Resource Conservation and Recovery Act (RCRA) Permit was approved on November 6, 1995 The permit modification embodied the elements of the Ryan's Pit PAM and provided additional detail on the regulatory constraints applicable to the thermal desorption The Ryan's Pit excavation and thermal desorption were completed in early 1996 The treated Ryan's Pit soil and debris await final disposition

On March 28, 1996, a PAM covering the excavation and thermal desorption of contaminated soil and debris originating from Trenches T-3 and T-4 (IHSS 110 and 111 1) was approved The soil and debris from Trenches T-3 and T-4 are scheduled for thermal desorption during the summer of 1996 using the same equipment and operating parameters employed to treat the Ryan's Pit soil and debris

Regulatory Framework

The treatment standards for hazardous debris are found at 6 CCR 1007-3, §268 45 Debris may be treated using the technologies identified in §268 45, Table 1, or to the waste-specific treatment standard for the waste contaminating the debris If the debris is treated using a Table 1 extraction or destruction technology, and the treated debris does not exhibit a characteristic, the treated debris is no longer a hazardous waste (See §261 3(f) and §268 45(c))

Thermal desorption is identified as an extraction technology in §268 45, Table 1 In the preamble to the final rule, the Environmental Protection Agency (EPA) elaborated on the rationale for the thermal desorption treatment standard

> *"The Agency is using the residue separated from debris as a surrogate means to ensure effective debris treatment The rule achieves this objective by requiring that the residue separated from the treated debris must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris If the residue (prior to further treatment) does not meet applicable treatment standards for organic compounds, it is an indication that the desorption process did not effectively extract the organic contaminants subject to treatment Thus, the treatment is not BDAT, the treated debris is not excluded from subtitle C, and both the residues and the debris cannot be land disposed without further treatment"*

See 57 FR 37232, August 18, 1992

Thus, to render a listed or characteristic debris non-hazardous using thermal desorption.

1 A written equivalent technology approval under §268.42(b) must be obtained (§268 45 Table 1 and Table 1, footnote 8);

2 Treated debris must not exhibit a characteristic (§261.3(f) and §268 45(c)),

3 Treatment residues (soil) must be separated from debris using simple physical or mechanical means, but the separation does not require a clean debris surface (§268 45(d)(i) and Table 1, footnote 9);

4 Treatment residues (soil) must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris (§268.45 Table 1); and

5 Brick, cloth, concrete, paper, pavement, rock, or wood greater than four inches in one dimension (thickness limit) will be evaluated on a case-by-case basis to determine if size reduction is required (§268.45 Table 1, footnote 5)

As stated earlier, this discussion outlines support for an equivalent technology approval. The other requirements shown above (numbers 2, 3, 4, and 5) are being addressed as part of the remedial actions Specifically, the characteristic determination on the treated debris (number 2) and the provisions for separation and sampling the residues (numbers 3 and 4) are addressed in the approved sampling and analysis plans (SAPs)

In regard to number 5, the debris from Ryan's Pit consists of remnants of metal drums which are not subject to the four-inch limitation prior to treatment. If larger, non-metallic debris is encountered in association with remediation at Trenches T-3 and T-4, an evaluation of the need for size reduction will be performed.

An equivalent technology approval requires

1 Information that the method is in compliance with federal, state and local requirements,

2 Information that the method is protective of human health and the environment,

3 A determination that the technology provides a measure of performance equivalent to that achieved by methods specified in Table 1 of 268 45 for hazardous debris, and

4 The approval must be in writing and may contain such provisions and conditions that the Administrator may deem appropriate (See §268 42(b))

Basis for Equivalent Technology Approval

Based on the information provided in the approved Proposed Action Memorandum and the approved RCRA permit modification, and based on actual operation of the unit, the thermal desorption technology complies with federal, state and local requirements and is protective of human health and the environment.

As noted in the quotation provided above, EPA relies on sampling results from treated soil residues to measure the effectiveness of the thermal desorption Attempts will be made to sample residues associated with the debris during the treatment of T-3/T-4 waste The approach is described in the *T-3/T-4 SAP*

For Ryan's Pit, essentially all soil was separated from the debris prior to treatment. Therefore, there is no data from treated residuals presently available Regardless, the separated soil and debris were treated in the same unit under identical conditions. For that reason, the sampling results from the treated soils are appropriate for evaluating and approving the technology A summary of Ryan's Pit treated soil data is provided in the following table

Contaminant Subject to Treatment[1]	Number of Samples/ Number of Detections	85% Upper Confidence Limit of Treated Soil Data[2] (mg/kg)	Waste-specific Treatment Standard[3] (mg/kg)
Methylene chloride	58/0	None detected	30
Tetrachloroethene	58/46	0 344	6
1,1,1-Trichloroethane	58/17	0 024	6
Trichloroethene	58/18	0 014	6

[1]As provided in the PAM, Ryan's Pit soils carry the F001 and F002 codes The contaminants subject to treatment are based on the F001 and F002 organic constituents detected in the untreated Ryan's Pit soils

[2]SW-846 directs application of 85% upper confidence limits when comparing suites of data to regulatory thresholds for identifying hazardous wastes For non-detect results, one half the lowest value reported (0 5 parts per billion) was used for the calculation

[3]See §268 48, Table UTS

The data demonstrates the soil associated with the debris was treated to contaminant levels far lower than the treatment standards for the organic compounds This data is a clear indication that the technology is effective and that an equivalent technology approval is warranted.

Based on past performance, the Department of Energy/Rocky Flats Field Office believes that the provisions and conditions applied through the Proposed Action Memorandum, the Permit Modification, and associated Sampling and Analysis Plans are sufficient and provide a basis for an equivalent technology approval

Additionally, §268 42(b) requires a written approval Please provide written approval as soon as possible For your convenience, we have included a concurrence sheet to document the equivalent technology approval If you have questions or comments, please call John Schmuck of RMRS at 966-4092